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Non-killing cartridge

The invention relates to a non-killing cartridge packed in a shell and manufactured of cloth and metal shots, intended to be fired with a firearm and used as forcible measures.

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5 Authorities are often involved in situations in which it is, for example, necessary to stop escaping or attacking persons with forcible measures. In these kinds of situations, it is generally necessary to use firearms and fire towards a person. A problem with traditional cartridges for firearms is that the shooter has to hit a closely defined

10 area in a person's body in order to only injure or paralyse the person and possibly not kill him/her. Such areas in a human being comprise legs and arms, the area of which, however, is relatively small compared with the rest of the body, and they usually are in motion in a situation calling for forcible measures. Thus, high accuracy is demanded of the shooter for hitting an arm or leg.

15 For correcting this drawback, cartridges have been developed, which do not kill the target fired at, but only injure and paralyse the person. The US patent publication 3 906 859 discloses a cartridge manufactured of one piece and consisting of soft material, which can be fired with a conventional firearm. However, this cartridge has the disadvantage that its meeting velocity is so high that one has to hit the target's legs in order to not cause a deadly injury. For securing this, the cartridge may

20 be fired to ricochet from the ground, but in this case, it is more difficult to aim and the accuracy of the cartridge suffers.

The US patent publication 3 982 489 discloses a cartridge manufactured of a circular piece, which is accurate due to its rotation speed, while the meeting velocity,

25 however, is kept low. However, this cartridge has the drawback that a separately fixed auxiliary device is needed in the gun for firing the cartridge.

The US patent publication 3 952 662 discloses a cartridge manufactured of castable material, which comprises a spherical middle section with radial ailerons extending from the said middle section. In an embodiment of this cartridge, the middle section

30 is provided with shots as ballast. In addition, there is known a cartridge manufactured of cloth and metal shots, in which the metal shots are arranged into one or two parallel shell bags. However, the disadvantage of these cartridges is that they have a poor dimensional stability and poor frost resistance.

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The object of the invention is to remove the above mentioned drawbacks and to provide a non-killing cartridge to be used as forcible means, which has better directional stability and frost resistance than previously known cartridges, and which may be fired with a conventional firearm without separate auxiliary devices.

- 5 This is achieved with a non-killing cartridge, which is characterised in that the metal shots are arranged into three or several shot bags.

The non-killing cartridge of the invention used as forcible measures has a better directional stability and frost resistance than previously known cartridges, and it may be fired with a conventional firearm without any separate auxiliary devices.

- 10 The embodiments of the invention are characterised in what is described in the following claims.

The invention is next explained in more detail, referring to the enclosed drawings, in which

Fig. 1 shows the first embodiment of the invention opened;

- 15 Fig. 2 shows the second embodiment of the invention opened;

Fig. 3 is a top view of the first embodiment of the invention, packed into a shell to be used in a firearm;

Fig. 4 shows the second embodiment of the invention, folded into a shell to be used in a firearm for packing; and

- 20 Fig. 5 shows the second embodiment of the invention, packed into a shell to be used in a firearm.

The non-killing cartridge according to an advantageous embodiment of the invention in Fig. 1 comprises a circular disc 1 made of cloth, to which shot bags 2 with metal shots are made by gluing or sewing. The shot bags 2 are arranged symmetrically in relation to the centre of the disc 1. A shot bag 3 heavier than the other shot bags 2 is placed in the centre of the circle.

- 25 The non-killing cartridge according to a second advantageous embodiment of the invention shown in Fig. 2 comprises a banded strip 4 made of cloth, to which shot bags 5 with metal shots are made by gluing or sewing. The shot bags 5 are arranged
30 on the strip 4 at regular intervals.

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Fig. 3 shows the non-killing cartridge of an advantageous embodiment of the invention, comprising the disc 1 and shot bags 2 and 3, packed into the shell 6 of a firearm.

5 In Fig. 4, there is shown the non-killing cartridge of a second advantageous embodiment of the invention, comprising the strip 4 and shot bags 5, folded in layers into the shell 6 of the firearm for packing.

Fig. 5 shows the folded cartridge of Fig. 4, comprising the strip 4 and shot bags 5 packed into the shell 6 of the firearm, the shell comprising the intermediate plug 7, gunpowder 8, and detonating cap 9. The end 10 of the shell 6 is folded inwards for preventing the cartridge from going off unintentionally.

The cloth to be used for the manufacture of both the advantageous embodiments in Figs. 1 and 2 has to be sufficiently strong, preferably Air-Bag cloth. The cloth used for the manufacture of the cartridge of the invention is further treated with silicone for improving the frost resistance of the cartridge. Due to this treatment, the shots are not caked together as one piece, but they keep their loose condition. Thus, the cartridge of the invention causes less damage when hitting its target.

When fired with a firearm, the cartridge of the invention first flies one metre in the packed form after leaving the barrel, and then opens to the shape shown in Figs. 1 or 2. The flying range of the cartridge is about 50 – 60 metres, which may be adjusted by changing the amount of gunpowder in the shell.

When hitting the target, the area of the cartridge is sufficiently big so that no penetration occurs. Due to the large weight of the cartridge and its division into several parts, the puncturing force of the cartridge is kept low while still maintaining the percussion force. Because of its durable structure, the cartridge does not break when leaving the barrel or hitting a soft target, thus operating in the desired way, and it may be used again. When hitting a hard target, the cartridge may be damaged so that, upon reloading, the shots may become discharged.

It is obvious for one skilled in the art that the various forms of the embodiment of the invention are not limited to the examples described above, but they may vary within the scope of the following claims. The cartridge according to the second embodiment of the invention may, for example, also be folded in an overlapping manner, besides the successive folding manner shown in Fig. 4.